

Remarks

In response to the non-final Office Action mailed May 3, 2004, the Applicants respectfully request reconsideration of the rejections and that the case pass to issue in light of the remarks below. By this paper, no claims have been added, canceled, or amended. As such, claims 1-18 are pending.

The Examiner has set forth the following rejections: claims 1, 4, 6, and 11-18 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S.P.N. 6,555,928 to Mizuno (hereinafter the Mizuno patent); and claims 2, 3, 5, and 7-10 are rejected under 35 U.S.C. § 103(a) as being anticipated by the Mizuno patent in view of U.S.P.N. 6,490,511 to Raffari (hereinafter the Raffari patent).

Rejection of Claims 1, 4, 6, and 11-18 Under 35 U.S.C. § 102(e)

Claims 1, 4, 6, and 11-18 are rejected as being anticipated by the Mizuno patent. These rejected claims include independent claims 1, 11, and 15. Each independent claim includes limitations directed towards having a “controller comprising a plurality of removable control portions, wherein each respective portion corresponds to a certain hybrid electric vehicle drive system functionality.” The Applicants respectively submit that the Mizuno patent fails to teach such a limitation.

The Mizuno patent discloses a vehicle system controller (VSC) 34 for controlling a number of vehicle units, including a fuel cell unit 38 and a battery unit 36. (See Figure 3) The Examiner asserts that the Mizuno VSC 34 includes removable control portions wherein each respective portions correspond to a certain hybrid electric vehicle drive system functionality, as recited by the Appellants in independent claims 1, 11, and 15.

The Applicants respectfully submit that the Mizuno VSC 34 does not include such removable control portions. Rather, the Applicants submit that the Examiner's

interpretation of the Mizuno patent is improper as the Mizuno patent merely discloses that the units (e.g., fuel cell unit 38, battery unit 36) are removable. The portions of the Mizuno VSC 34 which control the removable units are not themselves removable. Consequently, the Mizuno patent cannot, when construed properly, anticipate the Applicants' claimed invention.

In support of the Applicants' position, reproduced below are the portions of the Mizuno patent asserted by the Examiner to teach that the Mizuno VSC 34 includes removable control portions. The Mizuno patent clearly demonstrates that only the units 36 and 38 controlled by the controller 34 are removable. There is no teaching that the VSC 34 includes any removable control portions whatsoever.

The battery unit 36 preferably is an integrated unit featuring the battery controller 94, the sensors 114, 116, 188, the relay 96, and the battery 92, as shown in FIG. 3. Such a unitary construction can be removably mounted to the vehicle 20. To facilitate installation and removal, the two-way communication line 222 and the current lines 232, 234 can be connected to the battery controller 94 of the battery unit 36 through any suitable electrical couplers (not shown).

The battery controller 94 has a memory that can store data relating to the battery unit 38, such as temperature, voltage, current and the remaining capacity of the battery 92. This information can be continuously updated. The updated data can be transferred between the battery controller 94 and the vehicle controller 34 to calculate how much power will be required during operation and, when the battery 92 is replaced, the remaining capacity can be immediately recognized by the vehicle controller for processing of expected travel distance, for instance.

The fuel cell unit 38 preferably is an integrated unit as well. As such, the fuel cell unit 38 comprises a fuel cell controller 102, the sensors 120, 122, 124 (FIG. 3), the relay 106 and the fuel cell 100. More preferably, the reformer 62, the shift converter 134, the selective oxidation reactor 136 and the associated lines and valves are integrated into a single module. Such a fuel cell unit 38 can be removably mounted on the vehicle 20 and such a fuel cell unit 38 preferably comprises electrical couplers (not shown), such as quick connectors, that connect the two-way communication line 224 and the current

lines 226, 228 to the fuel cell controller 102 of the fuel cell unit 38.

(Column 12, lines 16-45, emphasis added)

The expressed teachings of the Mizuno patent clearly indicate that only the units 36 and 38 are removable. The Mizuno patent fails to disclose that the controller 34 includes portions for controlling the units 36 and 38 which are removable.

Claims 1, 4, 6, and 11-16 are rejected as being anticipated by the Mizuno patent. These rejected claims include independent claims 1, 11, and 15 which each include limitations directed towards having a “controller comprising a plurality of removable control portions, wherein each respective portion corresponds to a certain hybrid electric vehicle drive system functionality.” The Applicants respectively submit that the Mizuno patent fails to teach such a limitation, and therefore, claims 1, 4, 6, and 11-17 are not anticipated and patentable over the Mizuno patent.

Rejection of Claims 2, 3, 5, and 7-10 Under 35 U.S.C. § 103(a)

Claims 2, 3, 5, and 7-9 are rejected as being obvious over the combination of the Mizuno and the Raffari patents. Each of these rejected claims depends from independent claim 1 which, as described above, is patentable over the Mizuno patent. In particular, independent claim 1 is patentable over the Mizuno patent because the Mizuno patent fails to disclose that the Mizuno VSC 34 includes removable control portions. The Raffari patent fails to make up for this deficiency of the Mizuno patent. In fact, the Examiner has admitted that the Raffari patent fails to disclose a controller having removable control portions (See page 6 of the Office Action mailed April 29, 2003). Consequently, dependent claims 2, 3, 5, and 7-10 are patentable and nonobvious over the combination of the Mizuno and Raffari patents for at least the same reasons that the independent claims from which they depend are patentable.

Conclusion

For the foregoing reasons, Applicants respectfully submit that claims 1-18 are neither anticipated nor rendered obvious by the Mizuno and/or the Raffari patents. Applicants respectfully request that the Examiner pass this case to issue. The Examiner is invited to call the undersigned if it would further prosecution of this case to issue.

Respectfully submitted,

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